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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,414	11/21/2001	Sang On Park	3449-0179P	9772
2292	7590	05/21/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			AGUSTIN, PETER VINCENT	
			ART UNIT	PAPER NUMBER
			2652	8

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,414

Applicant(s)

PARK, SANG ON

Examiner

Peter Vincent Agustin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 1-9 and 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species A, Figures 1-4, readable on claims 1-12 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the species do not place an undue burden on the examiner since a reasonable number of species are set forth. This is not found persuasive because there is no allowable generic claim and serious burden is shown by the fact that applicant discloses patentably distinct species and not by showing different classification, search, or status in the art. See MPEP 803 & 808.01(a).

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 13-20 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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6. The specification is objected to because page 4, line 21 recites the abbreviation “RE” which has not been defined in the specification. This abbreviation has been perceived as a typographical error, and is assumed to be “FE”, unless the applicant states otherwise.

Claim Objections

7. Claims 1-7 are objected to because claim 1, line 2 recites “for maximizing a RF or minimizing a jitter” which should be --where an RF signal is maximum or jitter is minimum--.

Claims 2-7 are objected to because they are dependent upon claim 1.

8. Claims 5, 8, 9 & 11 are objected to because of the following minor informalities:

Claim 5, line 5: “the trembling” should be --trembling--, and “the disk” lacks antecedent basis.

Claims 8 & 9: “the case” should be --a case--.

Claim 11, line 1: “a optical” should be --an optical--.

Appropriate correction is required.

9. Claim 7 is objected to because “RE” on line 2 is not defined in the specification. See item 6 of this action.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claim 11 rejected under 35 U.S.C. 102(b) as being anticipated by Mochizuki (US 5,502,698).

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Mochizuki discloses a tilt controlling apparatus (figure 1) of an optical record medium (1), comprising: a RF (column 8, lines 41-45) and servo (8) error producing unit for producing RF and servo error signals from an electric signal outputted from an optical pickup unit (3); a servo controlling unit (9; see also column 8, lines 51-55) having a tilt error detecting and controlling block for receiving RF and focus error signals outputted from said RF and servo error producing block to produce DC and AC values about the tilt initialization and an optical disk (see column 6, lines 45-61; column 9, line 5); and a servo driving unit (9; see also column 8, lines 51-55) for controlling said optical pick-up unit in response to a signal of said servo controlling unit.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-4 & 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki in view of McLeod (US 6,256,271).

In regard to claim 1, Mochizuki discloses a tilt controlling method comprising the steps of: detecting a track of a focus error (column 8, lines 56-62) where an RF signal is maximum (column 10, lines 6-21; column 4, lines 7-23) as a focus is on; and calculating a variation per track (abstract, lines 8-11; column 9, lines 1-13; column 4, lines 23-29) of the focus error to control the tilt using the variation (abstract, lines 16-19; column 4, lines 35-39), but does not disclose detecting the maximum value and the minimum value of the focus error. In regard to

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claim 2, Mochizuki discloses calculating a variation per track of the focus error to detect a normalized DC component (column 9, lines 5-13), but does not disclose calculating a variation per track of the maximum value and the minimum value of the focus error to detect a normalized DC component. In regard to claim 4, Mochizuki discloses controlling the tilt, but does not disclose detecting a DC component using the maximum value and the minimum value of the focus error wherein the maximum value and the minimum value of the focus error can be applied separately or at the same time.

McLeod discloses detecting the maximum and minimum values of a focus error to detect a normalized DC component (column 8, lines 36-54) in order to compensate for fluctuations. It would have been obvious to one of ordinary skill in the art at the time of invention to have added the step of detecting the maximum and minimum values of the focus error signal to detect a normalized DC component as suggested by McLeod to the method of Mochizuki, the motivation being to compensate for fluctuations, thereby obtain accurate focusing.

In regard to claim 3, Mochizuki discloses that a tilt reference is varied as much as the variation per track to control the tilt (abstract, lines 8-11 & 16-19; column 9, lines 1-13; column 4, lines 23-29 & 35-39).

In regard to claim 12, see the 102 rejection above for a description of Mochizuki. Furthermore, Mochizuki discloses a RF peak detecting block for detecting the peak of an RF envelope (column 10, lines 6-21; column 4, lines 7-23); and a tilt controlling block for controlling the tilt using the RF signal and an FE signal (abstract, lines 8-11 & 16-19; column 9, lines 1-13; column 4, lines 23-29 & 35-39). However, Mochizuki does not disclose a detecting block for detecting the maximum and minimum values of a focus error per one rotation of a disk.

McLeod discloses a detecting block for detecting the maximum and minimum values of a focus error to detect a normalized DC component (column 8, lines 36-54) in order to compensate for fluctuations. It would have been obvious to one of ordinary skill in the art at the time of invention to have added the detecting block of McLeod to the apparatus of Mochizuki, the motivation being to compensate for fluctuations, thereby obtain accurate focusing.

14. Claims 5-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki & McLeod as applied to claim 1 above, and further in view of Kashiwabara (JP 2001023213).

For a description of Mochizuki & McLeod, see the rejection above. Furthermore, Mochizuki discloses the steps of calculating the variation per track of the focus error (abstract, lines 8-11; column 9, lines 1-13; column 4, lines 23-29), and normalizing the variation per track of the focus error (column 9, lines 5-13). However, the steps of detecting a surface vibration from the trembling of a disk, and normalizing the variation per track of the surface vibration to control the tilt are not disclosed.

Kashiwabara discloses the steps of detecting a surface vibration from the trembling of a disk, and normalizing the variation per track of the surface vibration to control the tilt (see abstract). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have added the vibration detecting step of Kashiwabara to the method of Mochizuki & McLeod, the motivation being to provide accurate tilt control and stable data reproduction.

In regard to claim 6, Mochizuki discloses that a normalized value and a reference value due to tilt initialization are considered to control the tilt (abstract, lines 16-19; column 4, lines 35-39; column 9, lines 5-13).

In regard to claim 7, Mochizuki discloses that the reference value due to tilt initialization is obtained from an FE track at a point where an RF envelope peak has the maximum value (column 8, lines 56-62; column 10, lines 6-21; column 4, lines 7-23).

15. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki, McLeod & Kashiwabara as applied to claim 5 above, and further in view of Itoh (US 5,583,838).

For a description of Mochizuki, McLeod & Kashiwabara, see the rejection above. However, Mochizuki, McLeod & Kashiwabara remain silent to whether the normalized value is proportional to time in the case of constant linear velocity.

Itoh discloses a control device that controls the data recording rate to be proportional to time in the case of constant linear velocity (see basic-abstract) in order to obtain high quality recording signals at high speed. It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have made the normalized value of Mochizuki, McLeod & Kashiwabara to be proportional to time in the case of constant linear velocity, as suggested by Itoh, the motivation being to obtain high quality recording signals at high speed.

16. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki, McLeod & Kashiwabara as applied to claim 5 above, and further in view of Van Den Enden (US 6,452,897).

For a description of Mochizuki, McLeod & Kashiwabara, see the rejection above. However, Mochizuki, McLeod & Kashiwabara remain silent to whether the normalized value is proportional to length in the case of constant angular velocity.

Van Den Enden discloses track portions having radial positions proportional to the length in the case of constant angular velocity (column 3, lines 63-66). It would have been obvious to

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one of ordinary skill in the art at the time of invention by the applicant to have made the normalized value of Mochizuki, McLeod & Kashiwabara to be proportional to length in the case of constant angular velocity as suggested by Van Den Enden, the motivation being to provide reliable reproduction

17. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki in view of McLeod and Kashiwabara.

Mochizuki discloses a tilt controlling method comprising the step of obtaining an FE track (column 8, lines 56-62) at a point where a RF signal has the maximum value (column 10, lines 6-21; column 4, lines 7-23). Mochizuki does not disclose the step of wobbling a tilt driving block at a certain frequency and the step of normalizing the detected FE track.

Kashiwabara discloses a step of wobbling a tilt driving block at a certain frequency (see abstract). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have added the wobbling step of Kashiwabara to the method of Mochizuki, the motivation being to provide accurate tilt control and stable data reproduction.

McLeod discloses a step of normalizing a focusing error signal (column 8, lines 36-54) in order to compensate for fluctuations. It would have been obvious to one of ordinary skill in the art at the time of invention to have added the normalizing step of McLeod to the method of Mochizuki, the motivation being to compensate for fluctuations, thereby obtain accurate focusing.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

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Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamazaki et al. (US 6,587,409) discloses a tilt servo apparatus driven based on an intensity of the reflected light of a laser beam.

Kimikawa et al. (US 6,295,256) discloses a focusing bias adjusting apparatus for removing an offset component in a focusing error signal, and a tilt adjustment is executed to maximize a read signal in order to compensate for tilt.

Wachi (US 5,379,282) discloses a detector for detecting the maximum and minimum values of a focusing error signal and an RF signal.

Sakuyama (JP 04307431) discloses a focusing technique without providing a separate tilt detector.

Tanaka et al. (JP 08185636) discloses a focus error standardization circuit and a circuit that detects the maximum and minimum values of a focus error.

Ishibashi et al. (US 5,663,942) discloses a jitter measurement apparatus wherein a signal where the jitter is minimum is regarded as a compensation signal.

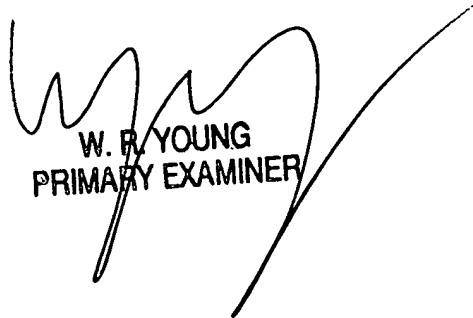
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Vincent Agustin whose telephone number is (703) 305-8980. The examiner can normally be reached on Monday thru Friday 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PVA
05/13/2004



W. R. YOUNG
PRIMARY EXAMINER